

23.3: Data and Analysis

Data Collection (25 points)

Following your detailed protocol, perform all the experiments. Record your observations and take pictures of your key steps in the process. Your observations and images need to be incorporated in your data section and this section should be as detailed as possible as you will use this information to complete your discussion.

Reactants	Initial amounts Trial 1	Initial amount Trial 2
NaOH		
DI water		
Ethanol		
Oil type		

Test	Observations	Bubble layer height (cm)
DI water		
Tap Water		
CaCl ₂ solution		

Data Processing (25 points)

1. Write the balanced chemical reaction for the formation of soap.
2. Classify the reagents for all the reactions.
3. Classify the reaction types for all the reactions.
4. What is the pH of your soap?
5. Fill in the following table using the data and observations from your experiment:

Assumptions made	Testing the assumption	If assumptions are wrong ...
The distilled water is pure	Evaporate it and check for residue	The density would change depending on the density of the contaminant.
Any oil will form soap	Run the reaction on many different oils	

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